

815 [Claim 1] A projector comprising:

a light source;
a liquid crystal device which modulates light emitted from the light source; and
a projection lens which projects the light modulated by the liquid crystal device;

wherein the liquid crystal device comprises a base substrate that has a plurality of pixel electrodes disposed in a matrix arrangement and drive elements each provided for corresponding one of the pixel electrodes and electrically connected thereto, a counter substrate provided with a light-shielding mask which covers at least a portion of the drive elements, and liquid crystals provided between the base substrate and the counter substrate; and

wherein the angle of light incident upon the liquid crystal device is restricted not to allow the light to strike the drive elements.

[Claim 2] A projector according to Claim 1, wherein a condenser lens is further provided at a light-incident side of the liquid crystal device, and wherein, by shifting a center axis of light incident upon the condenser lens and an optical axis of the condenser lens in parallel so that the incident angle of light that strikes the drive elements becomes small when the center axis of the light incident upon the condenser lens and the optical axis of the condenser lens coincide, the angle of the light incident upon the liquid crystal device is restricted.

[Claim 3] A projector according to Claim 2, wherein an optical axis

6nd
B1
of the projection lens is shifted parallel to the center axis of the light incident upon the condenser lens in the same direction as the optical axis of the condenser lens.

[Claim 4] A projector according to Claim 1, wherein a micro-lens array comprising a plurality of lenses corresponding to the pixel electrodes is further provided at a light-incident side of the base substrate, and wherein, by shifting a center axis of light incident upon the micro-lens array and a center of the micro-lens array so that the incident angle of light that strikes the drive elements becomes small when the center axis of the light incident upon the micro-lens array and the center of the micro-lens array coincide, the angle of the light incident upon the liquid crystal device is restricted.

[Claim 5] A projector according to Claim 4, wherein the micro-lens array is provided on the counter substrate.

A1> [Claim 6] A projector according to Claim 4 or Claim 5, wherein an optical axis of the projection lens is shifted parallel to the center axis of the light incident upon the micro-lens array in the same direction as the center of the micro-lens array.

B3> [Claim 7] A projector according to Claim 1, wherein, by tilting an optical axis of the light source with respect to a normal line of the counter substrate so that the incident angle of light that strikes the drive elements becomes small when the normal line of the counter substrate and the optical axis of the light source are parallel to each other, the angle of the light incident upon the liquid crystal device is restricted.

Comb
B3 [Claim 8] A projector according to Claim 7, wherein an optical axis of the projection lens is shifted parallel to the normal line of the counter substrate in the same direction as the optical axis of the light source.

A2 [Claim 9] A projector according to Claim 7 or Claim 8, wherein a micro-lens array comprising a plurality of lenses corresponding to the pixel electrodes is further provided at a light-incident side of the base substrate.

B5 [Claim 10] A projector according to Claim 9, wherein optical axes of the plurality of lenses are shifted parallel to a center of a pixel of the liquid crystal device towards the light source.

A3 [Claim 11] A projector according to either Claim 9 or Claim 10, wherein the micro-lens array is provided on the counter substrate.

[Claim 12] A projector according to any one of Claims 1 to 11, wherein a center axis of the light incident upon the liquid crystal device coincides with a distinct-vision direction of the liquid crystal device.

[Claim 13] A projector according to any one of Claims 1 to 11, wherein a viewing angle compensating film which causes a center axis of the light incident upon the liquid crystal device and a distinct-vision direction of the liquid crystal device to coincide is further provided at the light-incident side of the liquid crystal device.

[Claim 14] A projector according to any one of Claims 1 to 11, wherein a viewing angle compensating film which causes a center axis of light emitted from the liquid crystal device and a distinct-vision

direction of the liquid crystal device to coincide is further provided at a light-exiting side of the liquid crystal device.

[Claim 15] A projector according to any one of Claims 1 to 11, wherein viewing angle compensating films are further provided at the light-incident side and a light-exiting side of the liquid crystal device.

[Claim 16] A projector according to any one of Claims 1 to 15, wherein a scanning line and a data line crossing and situated above the scanning line on the base substrate are provided at the base substrate, and wherein the drive elements are connected to the data line and the scanning line, and include channel areas and semiconductor layers situated below the scanning line on the substrate.

[Claim 17] A projector according to any one of Claims 1 to 16, wherein a color light separation optical system which separates the light emitted from the light source into light beams of a plurality of colors is disposed between the light source and the liquid crystal device.

B7> [Claim 18] A projector according to Claim 17 comprising a plurality of the liquid crystal devices in correspondence with the light beams of a plurality of colors.